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REMARKS

Claims 1-28 are currently pending in the subject application and are presently under consideration. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments below.

I. Rejection of Claims 1-6 Under 35 U.S.C. §112, First Paragraph

Claims 1-6 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection should be withdrawn for at least the following reasons. One of ordinary skill in the art at the time of the invention could make or use the invention in view of the disclosure and the information known in the art without undue experimentation.

The standard for determining if the enablement requirement is met is to determine whether the experimentation needed to practice the invention is undue or unreasonable. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). *See also United States v. Teletronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) ("The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.").

The Examiner states, "Fig. 1d, the only apparent piece of evidence of how the two-verb process algebra is used or defined, *merely* states a set of relational rules" (See Final Office Action, p.2, ¶1a). (Emphasis added). This assertion is clearly erroneous. Fig. 1d (as described on page 15, lines 10-19 of the subject application) provides more than just a set of relational rules; Fig. 1d depicts exemplary *process algebra syntax* (e.g., for combinators, which is a derivation of PI calculus) that can be utilized in formulating a model for conducting business workflow transactions. As known, syntax relates to a grammar or a manner in which linguistic elements (e.g., words) are put together to form constituents (e.g., phrases and clauses). (See <http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=syntax>). Thus, the specification provides more than relational rules; it provides exemplary grammar related to process algebra – combinators – that can be utilized in accordance with an aspect of the present invention to

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represent independent and interdependent transactions. In particular, Fig. 1d provides the following process algebra syntax:

COMBINATORS SYNTAX

$$P ::= 0 \mid \alpha.P \mid P^{\perp} \mid P \otimes P \mid \text{Cut}(P, P) \mid !P \mid (\text{let}(x, y)P)$$

$$\alpha ::= t \mid x \mid x \alpha \otimes \alpha$$

Such syntax is based on PI calculus and enables one of ordinary skill in the relevant art at the time of the invention to make and/or use the subject invention in view of the specification as filed and what was known in the relevant art at the time of the invention without undue experimentation. For example, the symbol "P" is generally utilized to represent a process, "|" is the "par" operator which represents parallelism, "!" indicates recursion, *etc.* Since PI calculus was known in the art at the time of the invention, PI calculus and derivations thereof need not be provided in detail in the specification since one skilled in the art could practice the claimed invention upon review of applicants' detailed specification and claims. Thus, the subject application provides enabling syntax for one of ordinary skill in the art at the time of the filing of the subject application.

Furthermore, the claims recite utilizing a first verb of process algebra to represent at least one independent transaction and a second verb of the process algebra to represent at least one interdependent transaction, wherein the first and second verbs are respectively employed to differentiate the independent transaction(s) from the interdependent transaction(s). Thus, the subject claims disclose how the two-verb process algebra is utilized in a business process; the two verbs are utilized to represent parallelism by separating communicating concurrent transactions from independent concurrent transactions.

In view of the foregoing, it is readily apparent that one of ordinary skill in the relevant art at the time of the invention could make or use the invention from the specification and information known in the art without undue experimentation. Accordingly, this rejection of independent claim 1 (and claims 2-6, which depend therefrom) should be withdrawn.

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II. Rejection of Claims 1-6 and 23 Under 35 U.S.C. §101

Claims 1-6 and 23 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. It is respectfully submitted that this rejection is improper for at least the following reasons. The subject claims are directed to statutory subject matter.

Because the claimed process [method] applies the Boolean principle to produce a useful, concrete, tangible result ... on its face the claimed process comfortably falls within the scope of §101. *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358. (Fed.Cir. 1999); *See State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed.Cir.1998) (finding a system implementing a financial management structure satisfied §101 because it constituted a practical application of a mathematical algorithm by producing a useful, concrete and tangible result).

In the subject Final Office Action (dated June 15, 2004), the Examiner asserts "the method steps set forth in the rejected claims still produces [sic] no concrete and tangible results" and "the business process would not have been necessarily carried out or itself changed in any concrete tangible way." (See Final Office Action, pp. 3-4, ¶b). As provided above, the legal standard set forth by the Federal Circuit in *AT&T* for determining whether a claim is directed towards statutory subject matter is whether a claim is applied in a practical application to produce a useful, concrete and tangible result. Thus, determining whether a business process would necessarily be carried out does not resolve whether statutory subject matter has been claimed. Rather, the inquiry is whether the claimed invention produces a useful, concrete and tangible result. Since the claimed invention recites a practical application of modeling a business process that produces a useful, concrete and tangible result – a result that renders a process algebra based differentiation between independent and interdependent transactions of the business process - the claimed invention recites statutory subject matter pursuant to §101.

In addition, and contrary to the Examiner's assertion, the claimed invention recites the business process is changed in a tangible manner. For example, the subject claims recite a business process that comprises a plurality of transactions is tangibly changed by dividing the business process into at least two separate transactions – at least one independent and at least one interdependent transaction. Thus, the business process is at least tangibly changed into at least

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two disparate transactions. Furthermore, the subject claims recite that process algebra verbs are utilized to represent the at least two disparate (independent and interdependent) transactions. Therefore, not only is the business process tangibly divided into independent and interdependent transactions, but these transactions are tangibly represented by verbs from process algebra. Differentiating such transaction can introduce data for reliability, availability, performance, and fault tolerant storage and processes, and has contributed to client-server models and remote procedure calls for distributed computation. (See p.1, ¶2). Hence, it is readily apparent that the novel technique of utilizing process algebra to provide transaction differentiation produces a useful, tangible and concrete result.

Since the claimed invention is applied in a practical application that produces a useful, concrete and tangible result in the art of business process modeling, the subject claims recite statutory subject matter. Accordingly, withdrawal of this rejection is respectfully requested.

III. Rejection of Claims 7-14, 22-25, and 28 Under 35 U.S.C. §102(b)

Claims 7-14, 22-25, and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Release 8.0 of the publicly available Workflow Template software product as evidenced by "Using the WFT Development Environment" (hereinafter, "Template"). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Template does not teach or suggest *each and every* element as set forth in the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim. *Trintec Industries, Inc., v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 U.S.P.Q.2D 1597 (Fed. Cir. 2002). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The subject claims relate to systems and methods that utilize process algebra to facilitate modeling business processes, wherein the claims recite a *distinguishing component* that distinguishes independent (autonomous) transactions from interdependent transactions, a

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boundary establishing component that defines transaction boundaries, and a *component that defines concurrent synchronizing constraints*. Template does not teach or suggest such claimed aspects of the subject invention.

Independent claims 7, 23, 24 and 28 recite systems and methods that utilize process algebra to represent a business process, wherein a *distinguishing component* is utilized to distinguish business process independent (autonomous) transactions from interdependent transactions. In the Final Office Action (dated June 15, 2004), the Examiner continues to mistakenly assert that the copy flow junction box of Template teaches a distinguishing component as recited in the subject claims, but also concedes that the copy flow junction box of Template does not distinguish independent and interdependent transactions, but rather outputs identical copies of a work item. It is respectfully submitted that the foregoing admission and assertion are contrary. Then, the Examiner states, "it is irrelevant whether the flows leaving the copy flow junction box are identical because it is the tasks themselves that are distinguished by being represented separately within the workflow model." (See Final Office Action, pp.4-5, ¶c). Assuming *arguendo* that the Examiner's interpretation of Template is correct, this interpretation of Template does not teach or suggest the subject claims; the claimed invention recites a component that distinguishes independent and interdependent transactions in a business process, not a component that generates work item copies that are routed to destination tasks, wherein the destinations can be distinguished.

Moreover, since the Examiner asserts that the copy flow junction box teaches the claimed distinguishing component, it is imperative (not irrelevant as stated by the Examiner) to determine whether the copy flow junction box distinguishes independent and interdependent transactions because such limitations are recited in the claimed invention. However, rather than finding a component in Template that teaches a distinguishing component as set forth in the claimed invention, the Examiner relies on a component that does not distinguish (the copy flow junction box) and attempts to overcome this deficiency by noting copies of work items can be routed from the copy flow junction box to different destinations. Such argument does not meet the novelty standard, which provides "a single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim." (See *Trintec Industries, supra*). Since the copy flow junction box of Template does not teach or

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suggest the distinguishing component as recited in the claimed invention, Template fails to teach or suggest each and every limitation as set forth in the claimed invention.

The Examiner references page 3-20 of Template to support a contention that the copy flow junction box distinguishes “concurrent autonomous (using separate flows) business operations and concurrent interdependent (using a single flow) business operations.” (See Final Office Action, p.9, ¶1). The Examiner references the section titled “Creating copy flows” to support this contention. However, the section does not teach distinguishing independent and interdependent transactions as recited in the subject claims. Rather, this section discloses the junction box is employed to provide an exact copy of a work item to a destination. This section of Template is reproduced below.

Creating copy flows

A copy flow is a single flow that splits into two or more flows. A junction box is displayed at the location where the flow splits into separate flows to form a copy flow. An exact copy of the work item or work item set is sent to each destination task.

In addition, page 3-3 of Template provides a junction is “the point where one flow splits into multiple flows to form a copy flow ...” and a copy flow “automatically routes a copy of the work item to each destination task.”

In view of the above excerpts, it is readily apparent that the copy flow junction box is utilized to route *exact copies of a work item* to different destinations. This is substantially different from the distinguishing component recited in the claimed invention. The distinguishing component of the claimed invention provides a mechanism to differentiate independent and interdependent transactions of a business process and, thus, does not simply generate exact copies of the business process and send such copies to different destinations. In contrast, the copy flow junction box does not split a work item into different components, but generates exact copies that are conveyed to different destinations.

It appears from the Examiner’s arguments that he may be confusing a copy flow, which is a path between a source and destination task, with a work item, which is the information received, copied and sent *via* a the copy flow junction box. For example, the Examiner states the

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copy flow junction box distinguishes “concurrent autonomous (using separate flows) business operations and concurrent interdependent (using a single flow) business operations.” (See Final Office Action, p.9, ¶1). However, as defined *supra* in the excerpts of Template, “separate flows” are related to the paths between source and destination tasks. Thus, although a plurality of flows to different destination tasks can exist, the copy flow junction box receives, copies and sends exact copies of a work item to the destination tasks and does not distinguish between independent and interdependent transaction within a work item.

Independent claim 12 recites systems and methods that utilize process algebra to facilitate modeling a business process, wherein a *boundary establishing component* is utilized to defined transaction boundaries. Template is silent regarding a component that defines transaction boundaries as recited in the claimed invention. In the subject Final Office Action, the Examiner contends Template teaches such novel aspects and references Table 3-1 on page 3-3 of Template to support this contention. The Examiner states “Template comprises ... at least one boundary establishing component (flows) for defining transaction (work item) boundaries (a flow defines a possible route between tasks through which a work item can travel...)” (See p.5, ¶4 – p.6, ¶1). Thus, the Examiner interprets a transaction boundary to be synonymous with a route between tasks. However, a “route” is defined as a “traveled way,” a “line of travel,” or a “course of travel” (See <http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=route>), whereas a “boundary” is defined as a “limit” or “extent” (See <http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=boundary>). Thus, a route is not synonymous with a boundary. In addition, the term “boundary” as utilized in applicants’ specification is consonant with the dictionary definition provided above. For example, the specification of the subject application on page 13, lines 12-21 describes an aspect of the present invention, wherein transaction boundaries are set to define a limit or extent of child transactions within parent transactions.

Independent claims 22, 23, 24 and 28 additionally recite systems and methods that utilize process algebra to facilitate modeling a business process, wherein a *component* is utilized to *define concurrent synchronizing constraints as occurring upon completion of an autonomous (independent) operation (transaction)*. In the subject Final Office Action, the Examiner contends Template teaches such novel aspects and references page 3-19 of Template to support this contention. The Examiner states “Template comprises a component (compound flow

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junction box) for defining concurrent synchronizing constraints as occurring upon the completion of the autonomous operations (forming a concatenation of the two or more input work items, as a result of an *And* junction condition ...).” (See p.5, ¶4 – p.6, ¶1). (Emphasis in original quotation). As noted by the Examiner, the compound flow junction box can join (concatenate) work items of respective flows through an “and” junction condition. However, the subject claims do not recite concatenating work items, but rather synchronizing constraints upon completion of autonomous operations/transactions. This is opposed to expressing synchronized constraints through communication between transactions and is not related to concatenating work items.

In view of the foregoing, it is respectfully submitted that Template does not teach or suggest *each and every* element as set forth in the subject claims; thus, this rejection of independent claims 7, 12, 22-24 and 28 and dependent claims 8-11, 13-14 and 25 should be withdrawn.

IV. Rejection of Claims 15-20 Under 35 U.S.C. §103(a)

Claims 15-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Template. It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Claims 15-20 depend from independent claim 12 and, thus, for at least the reasons noted *supra* regarding independent claim 12, the rejection of claims 15-20 should be withdrawn.

V. Rejection of Claim 21 Under 35 U.S.C. §103(a)

Claim 21 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Template as applied to claim 13. Official Notice is taken by the Examiner that it is well-known and commonly practiced in the computer arts at the time the subject invention was made to incorporate a computer readable medium into a computer system in order to allow data transfer between the medium and the computer system. It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Claim 21 depends from independent claim 12, and the Official Notice does not make up for the aforementioned deficiencies of Template with respect to claim 12. Accordingly, withdrawal of this rejection is respectfully requested.

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VI Rejection of Claims 15-20 Under 35 U.S.C. §103(a)

Claims 15-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Template as applied to claim 12, and further in view of Chen, *et al.* (US 5,940,839). This rejection should be withdrawn for at least the following reasons. Template does not teach or suggest the claimed limitations of independent claim 12 as noted *supra*, and Chen, *et al.* fails to make up for the aforementioned deficiencies of Template. Accordingly, this rejection should be withdrawn.

VII. Rejection of Claims 26 and 27 Under 35 U.S.C. §103(a)

Claims 26 and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Template as applied to claim 24, and further in view of Ambler, *et al.* (US 6,393,456). Withdrawal of this rejection is respectfully requested for at least the following reasons. Claims 26 and 27 depend from independent claim 24, and Ambler, *et al.* does not make up for the aforementioned deficiencies of Template regarding the limitations recited in claim 24. Therefore, this rejection should be withdrawn.

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CONCLUSION

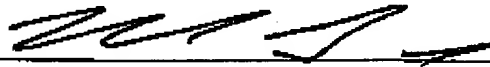
The present application is believed to be in condition for allowance, in view of the above comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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